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REMARKS

Claims 1-16 and 21-25 are pending in the application.

Claims 1, 6, 9, 12-16, and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi (U.S. Patent US 6,466,348 B1) in view of Admitted Prior Art (page 15, lines 15-18, hereinafter "APA") and further in view of Sato (U.S. Patent US 5,491,686, hereinafter "Sato").

Claims 2-5, 7-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi in view of APA and Sato and further in view of Darcie (U.S. Patent US 4,701,904, hereinafter "Darcie").

Each of the various rejections is overcome by various amendments and/or arguments that are presented.

Entry of this Amendment is proper under 37 CFR § 1.116 since the amendment: (a) places the application in condition for allowance for the reasons discussed herein; (b) does not raise any new issue requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution; (c) satisfies a requirement of form asserted in the previous Office Action; (d) does not present any additional claims without canceling a corresponding number of finally rejected claims; or (e) places the application in better form for appeal, should an appeal be necessary. The amendment is necessary and was not earlier presented because it is made in response to arguments raised in the final rejection. Entry of the amendment is thus respectfully requested.

Any amendments to any claim for reasons other than as expressly recited herein as being for the purpose of distinguishing such claim from known prior art are not being made with an intent to change in any way the literal scope of such claims or the range of equivalents for such claims. They are being made simply to present language that is better in conformance with the form requirements of Title 35 of the United States Code or is simply clearer and easier to understand than the originally presented language. Any amendments to any claim expressly made in order to distinguish such claim from known prior art are being made only with an intent to change the literal scope of such claim in the most minimal way, i.e., to just avoid the prior art in a way that leaves the claim novel and not obvious in view of the cited prior art, and no equivalent of any subject matter remaining in the claim is intended to be surrendered.

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Also, since a dependent claim inherently includes the recitations of the claim or chain of claims from which it depends, it is submitted that the scope and content of any dependent claims that have been herein rewritten in independent form is exactly the same as the scope and content of those claims prior to having been rewritten in independent form. That is, although by convention such rewritten claims are labeled herein as having been "amended," it is submitted that only the format, and not the content, of these claims has been changed. This is true whether a dependent claim has been rewritten to expressly include the limitations of those claims on which it formerly depended or whether an independent claim has been rewriting to include the limitations of claims that previously depended from it. Thus, by such rewriting no equivalent of any subject matter of the original dependent claim is intended to be surrendered. If the Examiner is of a different view, he is respectfully requested to so indicate.

REJECTIONS

35 U.S.C. §103

Claims 1, 6, 9, 12-16, and 21-25

Claims 1, 6, 9, 12-16, and 21-25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Izumi in view of APA and further in view of Sato. Applicants respectfully traverse the rejection.

Independent claims 1 and 9 have been amended solely to clarify the invention by providing proper antecedent basis for the upstream and downstream optical signals within the respective first and second optical blocks. No new matter has been added.

The Office Action relied on Izumi's combination of "elements 325, 315, 360, and 340, and related elements" in Fig. 21 and elements in Fig. 7 as disclosing a first optical block in Applicants' independent claim 1, specifically citing the first device (Fig. 7, O/E converter 183), second device (Fig. 7, elements 185, 186 and 187), third device (Fig. 7, elements 188, 189 and 190), and fourth device (converter 184).

However, the Office Action fails to identify which elements in Izumi's Fig. 21 or Fig. 7 correspond to the fifth and sixth devices in Applicants' claim 1.

Even assuming, arguendo, that there are elements in Izumi's Fig. 21 that may correspond to the fifth and sixth devices, claim 1 is still not obvious over Izumi in view of APA and Sato for the following reasons.

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The Office Action relied on Izumi's circuits 315 and 316 (Fig. 21, control circuits for upstream and downstream signals) as disclosing the "control device" of Applicants' invention, and further relied on APA for teaching that, in case of fault, upstream and downstream channels can be combined to get one valid copy of each channel.

Applicants submit that there is no motivation to combine Izumi and APA because Izumi and APA address totally different problems. Specifically, Izumi addresses signal errors arising from power fluctuations by using an automatic gain level control (AGC) scheme, in which information relating to the transmission powers of an optical amplifier stage and its preceding stage are used for AGC for the present stage, while APA addresses SONET path protection that has no relationship to AGC.

Since there is no teaching in Izumi to suggest that the AGC apparatus of Figs. 21 and 7 can be modified to provide for signal redundancy for fault protection, one skilled in the art would not have found it obvious to combine Izumi's AGC apparatus with APA's teaching.

Furthermore, given the specific purpose that Izumi's apparatus is designed for, and the nature of the downstream/upstream signals in Izumi, it simply would not be feasible to combine the upstream and downstream channels, as suggested in the Office Action.

In particular, Izumi's AGC scheme operates separately for upstream and downstream traffic, and relies on information that is specific or unique to each amplifier stage in each traffic direction. For example, circuit 315 processes a control signal in the "downstream" signal 301, which contains transmission power information relating to an upstream trunk apparatus immediately preceding the local apparatus in Fig. 21, and also processes a signal from monitor 352, which is specific to the downstream traffic (e.g., being dependent on optical amplifier 308).

Similarly, for circuit 316, the control signal in the upstream signal 304 and the optical signal from monitor 359 each contains information specific to the apparatus associated with the upstream traffic (e.g., relating to the transmission power of a downstream apparatus where signal 304 comes from, and the optical amplifier 309). Based on the power information that is unique to the respective downstream and upstream traffic, the apparatus in Izumi's Fig. 21 (and Fig. 7) provides separate AGC for the downstream and upstream traffic.

Since information in the upstream and downstream signals in Izumi's Fig. 21 are different from each other, it simply is not feasible to combine these channels to arrive at a "valid" copy of

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a channel in response to a disruption of the control information. In Izumi, the only "valid" channel information is the one specific to the upstream signal or the downstream signal.

Thus, Applicants submit that, even if combined, Izumi and APA will not result in any workable device with features relating to: "wherein, in response to a fault that results in disruption of the control information, the control device causes the channels of the first upstream optical signal to be combined with the channels of the first downstream optical signal to provide thereby at least one valid copy of each channel", as provided in Applicants claim 1.

The Office Action further relied on Sato for disclosing another feature missing from Izumi and APA, namely, that the control device selects optical signal path based on a relative quality of the optical signals.

Applicants submit, however, that since Izumi's upstream and downstream signals in Fig. 21 contains information that is specifically associated with, or unique to, the apparatus in the respective traffic direction, it simply would not make sense, in the absence of fault, to select one of the two signals based on their relative quality, because these signals in Izumi are not meant to be redundant copies of each other.

Thus, whether in the presence or absence of fault, the combined teachings of Izumi, APA and Sato, would still not have resulted in Applicants' invention, including the feature of: "in response to no fault that results in disruption of the control information, the control device selects either the first upstream optical signal or the first downstream optical signal based on a relative quality of the optical signals," as provided in Applicants' claim 1.

As such, Izumi, APA and Sato singly or in combination, fail to teach or suggest Applicants' invention as a whole. Applicants' claim 1 is therefore patentable over Izumi, APA and Sato.

Independent claims 9 and 25 each recites features similar to those in claim 1. Thus, claims 9 and 25 are also patentable over Izumi, APA and Sato.

Since all of the dependent claims that depend from the independent claims include all the limitations of the respective independent claim from which they ultimately depend, each such dependent claim is also allowable over Izumi, APA and Sato.

Therefore, claims 1, 6, 9, 12-16 and 21-25 are allowable over Izumi, APA and Sato under 35 U.S.C. §103. As such, the rejection should be withdrawn.

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Claims 2-5, 7-8 and 10-11

Claims 2-5, 7-8, and 10-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Izumi in view of APA and Sato and further in view of Darcie.

Each ground of rejection applies only to dependent claims, and each is predicated on the validity of the rejection under 35 U.S.C. 103 given Izumi in view of APA and further in view of Sato. Since the rejection under 35 U.S.C. 103 given Izumi in view of APA and further in view of Sato has been overcome, as described hereinabove, and there is no argument put forth by the Office Action that Darcie supplies that which is missing from Izumi in view of APA and further in view of Sato to render the independent claims obvious, these grounds of rejection cannot be maintained.

Therefore, claims 2-5, 7-8 and 10-11 are allowable under 35 U.S.C. §103. As such, the rejection should be withdrawn.

CONCLUSION

It is respectfully submitted that the Office Action's rejections have been overcome and that this application is now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

If, however, the Examiner still believes that there are unresolved issues, the Examiner is invited to call Eamon Wall at (732) 530-9404 so that arrangements may be made to discuss and resolve any such issues.

Respectfully submitted,

Dated: 3/29/07

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